

### **REMARKS**

This communication responds to the Office Action mailed on July 17, 2006. Claims 1, 14, 26, and 30 are amended, no claims are canceled, and no claims are added. As a result, claims 1-12, 14-26, and 28-30 are now pending in this Application.

#### **§112 Rejections of the Claims**

Claims 1-12 and 14-22 were rejected under 35 USC § 112, first paragraph, as failing to comply with the written description requirement. Claims 1-12 and 14-22 were rejected under 35 USC § 112, first paragraph, as being based on a disclosure which is not enabling. Claim 12 was rejected under 35 USC § 112, first paragraph, as failing to comply with the enablement requirement. Since the Office has not established a *prima facie* case in each instance, the Applicant respectfully traverses.

To support the first rejection, the Office asserts that, with respect to claims 1 and 14, "... the specification does not disclose that the openings are excluded being unfilled. [sic] In fact the original filed claims state that the holes were filled ... therefore this limitation is considered new matter." The Applicant respectfully disagrees. As noted in the original Application text:

"The openings 234 may also include a thermally conductive material 238 located in one or more of the openings 234. The thermally conductive material 238 may be selected from at least one of a solid, liquid, and/or paste." Application, pg. 5, lines 2-4; and pg. 7, lines 7-9.

Thus, if the thermally conductive material 238 *may* be located in one or more of the openings 234, it would be apparent to one of ordinary skill in the art that its use is optional. Indeed, the Application explicitly illustrates material having openings that are both filled and unfilled. See Application, FIGs. 1, 2, and 3, elements 134, 234, and 334, respectively.

In addition, the method 411 as initially described in the Application recites coupling a heat sink and heat source together using the material *without* describing the use of any thermally conductive material to fill the openings. See Application, pg. 6, line 27 – pg. 7, line 6. The use of thermally conductive material in the openings is only later introduced, and again described in an optional manner:

“The method 411 may also include applying a thermally conductive material (possibly selected from at least one of a solid, liquid, and/or paste) to selected ones of the plurality of openings at block 435.” Application, pg. 7, lines 7-9.

To support the second rejection, the Office appears to rely on features that are not taught by the Applicant. For example, the assertion is made that “the apparatus is an electronic packaging [sic] and the heat sink and heat sources are layers or materials in the packaging are critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure.” The Applicant respectfully disagrees.

As noted in the Application, the apparatus may comprise a unitary layer of electrically non-conductive material, as well as a heat source and a heat sink. See Application, pg. 3, lines 24-29. The heat source may comprise a circuit, a die, and/or an integrated circuit package. *Id.* at line 28. Thus, the heat sink and heat source are not “layers or materials in the packaging” as asserted by the Office, since the heat source alone may comprise an integrated circuit package. However, to more clearly identify the claim elements, and not for reasons related to patentability, claims 1, 14, and 26 have been amended to recite different types of heat sources specifically called out in the specification. Claim 30 has been amended for consistency with the language of claim 26, and not for reasons related to patentability.

To support the third rejection, the Office asserts that the “Applicant has not provided information in the specification of how a layer of glass beads would stay together without having filled openings.” The Applicant respectfully disagrees.

As can be seen in FIG. 3 of the Application, a system 350 may be constructed having a heat sink 320 that serves to contain the unitary layer 310. If containment is not used (e.g., embodiments shown in FIGs. 1 and 2), and binding between the beads is desired, those of ordinary skill in the art understand that glass beads can be face-fused, or lightly sintered to form a unitary mass (e.g., See Appendix A, attached hereto). Whether such construction is used in conjunction with any particular embodiment of the unitary layer 310 would ultimately be decided by the system designer. In any case, given the

content of FIG. 3, it is apparent that one of ordinary skill in the art would be able to make and use the illustrated embodiment, along with numerous others.

The M.P.E.P. § 2164 *et seq.* notes that the burden is on the Examiner to establish a *prima facie* case to maintain a rejection of non-enablement with respect to the disclosure of a patent application under 35 U.S.C. § 112, first paragraph. Such a case requires:

1. a rational basis as to
  - a. why the disclosure does not teach, or
  - b. why to doubt the objective truth of the statements in the disclosure that purport to teach;
2. the manner and process of making and using the invention;
3. that correspond in scope to the claimed invention;
4. to one of ordinary skill in the pertinent technology;
5. without undue experimentation; and
6. dealing with subject matter that would not already be known to the skilled person as of the filing date of the application.

“The Examiner must provide evidence ... supporting each of these elements for a rejection under the first paragraph of § 112 to be proper.” See *Patent Prosecution, Practice and Procedure Before The United States Patent Office*, Ira H. Donner, pg. 691, 2002.

In each instance of rejection described above, there is no evidence to support the elements required to establish a *prima facie* case. Reconsideration and withdrawal of these rejections under 35 U.S.C. § 112, first paragraph, is therefore respectfully requested.

#### §102 Rejection of the Claims

Claims 1, 11 and 14 were rejected under 35 USC § 102(b) as being anticipated by Petersen (U.S. 3,736,769; hereinafter “Petersen”). The Applicant does not admit that Petersen is prior art and reserves the right to swear behind this reference at a later date. In addition, because the Office has not established a *prima facie* case of anticipation, the Applicant respectfully traverses this rejection of the claims.

Anticipation under 35 USC § 102 requires the disclosure in a single prior art reference of each element of the claim under consideration. *See Verdegaal Bros. V. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ 2d 1051, 1053 (Fed. Cir. 1987). It is not enough, however, that the prior art reference discloses all the claimed elements in isolation. Rather, “[a]nticipation requires the presence in a single prior reference disclosure of each and every element of the claimed invention, *arranged as in the claim.*” *Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co.*, 730 F.2d 1452, 221 USPQ 481, 485 (Fed. Cir. 1984) (citing *Connell v. Sears, Roebuck & Co.*, 722 F.2d 1542, 220 USPQ 193 (Fed. Cir. 1983)) (emphasis added). “The *identical invention* must be shown in as complete detail as is contained in the ... claim.” *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989); MPEP § 2131 (emphasis added).

Claims 1 and 11 each include the element of “a heat source comprising a circuit”. Claim 14 includes the element of “a heat source comprising a circuit package”. Neither of these elements is taught or suggested by Petersen.

Since Petersen does not teach the identical invention claimed by the Applicant, claims 1, 11, and 14 should be in condition for allowance. Reconsideration and withdrawal of the rejection under § 102 is therefore respectfully requested.

**CONCLUSION**

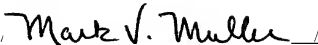
The Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone the Applicant's attorney at (210) 308-5677 to facilitate prosecution of this Application. If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

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